

CLAIMS

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1) Glycopeptides, characterized in that they possess antibacterial properties conferred by a sequence of aminated acids containing at least one aminated acid, O-substituted by a glycosyl group containing one or several charges of ose and/or osamine, a poly-ose and/or poly-osamine.

2) Glycopeptides according to Claim 1, characterized in that the substituted aminated acid is a hydroxylated aminated acid such as threonine, serine or tyrosine.

3) Glycopeptides according to Claim 1 or 2, characterized in that the glycosyl group is linear or cyclic, substituted or not substituted in the form of α or β , advantageously comprising 5 or 6 carbon atoms, the possibly present substituents being chosen especially from among the alkyl radicals with 1 to 4 carbon atoms or, in particular, for the osamines among the acyl radicals, more particularly, acetyl.

4) Glycopeptides according to Claim 3, characterized in that the glycosyl group is chosen from among the hexoses such as galactose, glucose, tallose, altrose, gulose, mannose and allose, the hexosamines such as galactosamine, glucosamine, tallosamine, altrosamine, gulosamine, mannosamine, allosamine, or the hexosamines substituted by one or several hexoses charges such as (N-acetylhexosamine)-hexose(s).

5) Glycopeptides according to Claim 4, characterized in that the glycosyl group is an N-acetylglucosamine or an N-acetylgalactosamine, substituted by a galactose or a galactose-glucose charge.

6) Glycopeptides according to one of Claims 1 to 5, characterized in that they are of the type of peptides as those obtained from arthropods and particularly from larvae or from adults of insects by a process comprising:

- the induction of their synthesis, particularly by injection of bacteria in sufficient doses or by septic wound or other trauma,

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- extraction so as to collect the peptides that underwent post-translational glycosylation and, as the case may be,

- the fractionation of the isolated extract so as selectively to separate the glycopeptides according to the level of their antibacterial activity.

7) Glycopeptides according to one of Claims 1 to 6, characterized in that they present an activity against gram-negative and gram-positive germs.

8) Glycopeptides according to one of Claims 1 to 7, characterized in that their peptidic sequence responsible for their antibacterial activity, which comprises at least one substituted aminated acid as defined in Claim 1, is contained in a field comprising at least 30% of proline groups approximately.

9) Glycopeptides according to Claim 8, characterized in that said sequence comprises at least one proline-threonine/serine-Xaa1-Xaa2-proline O-glycosylation charge in which the Xaa1 and Xaa2 charges, identical or different, are variable aminated acids.

10) Glycopeptides according to Claim 8 or 9, characterized in that said sequence comprises at least one hydrophobic aminated acid such as threonine, substituted by a glycosyl group, in particular, by an N-acetyl-hexosamine or (N-acetylhexosamine)-hexose group.

11) Glycopeptides according to one of Claims 1 to 10, as they can be induced in drosophila.

12) Glycopeptides according to Claim 11, characterized in that they comprise or that they are made up of sequences (I) or (II) in which at least one threonine or serine charge is O-substituted as defined in one of Claims 3 to 5.

13) Glycopeptides according to one of Claims 1 to 10, such as they can be induced among the diptera, particularly in Phormia terranova.

14) Glycopeptides according to Claim 13, characterized in that they comprise or are made up of a sequence of aminated acids such as determined according to the graduation of Edman, responding to one of the sequences (III) to (VIII), where threonine or serine in position 10 and/or that in position 54 is

(are) substituted by a glycosyl group as defined in one of Claims 3 to 5. /35

15) Glycopeptides according to one of Claims 1 to 10, such as they can be induced among the hymenoptera, especially among the bees.

16) Glycopeptides according to one of Claims 1 to 10, characterized in that they are those that can be induced among the hemiptera, for example, in Pyrrhocoris apterus.

17) Glycopeptides according to Claim 16, characterized in that they comprise or are made up of sequence (IX).

18) The fragments, mutants and functional derivatives of the glycopeptides according to one of Claims 1 to 17.

19) Sequences of nucleotides comprising the genetic information corresponding to the aminated acids of glycopeptides according to one of Claims 1 to 18, the sequences capable of being hybridized with the latter under stringent conditions, the complementary sequences and the corresponding ARN.

20) Carriers of expression and cloning comprising at least one fragment of sequences of nucleotides according to Claim 19 and hosts transformed by these carriers.

21) Products of expression of carriers according to Claim 20.

22) Process for obtaining glycopeptides according to one of Claims 1 to 18, characterized in that one proceeds to the chain-

linking of aminated acids by way of synthesis, at least one of the aminated acids used being O-substituted as defined in Claim 1 and being introduced so as to occupy the desired position in the sequence.

23) Antibacterial agents, characterized in that they consist of at least one glycopeptide according to one of Claims 1 to 18. /36

24) Antibacterial compounds, characterized in that they include an effective quantity of glycopeptides according to one of Claims 1 to 18 in association with an inert vehicle.

25) Compounds according to Claim 24, characterized in that they are used in human or veterinary therapy, the inert vehicle being appropriate for this particular use.

26) Compounds according to Claim 24, characterized in that they are used in agricultural chemistry, the inert vehicle being appropriate for this particular use.

27) Compounds according to Claim 24, characterized in that they are used in the agribusiness industry.

28) Vegetable cells and plants whose genome is modified by the presence of genes capable of coding for the peptidic sequences of glycopeptides according to one of Claims 1 to 18, vegetable cells and plants being capable of ensuring the glycosylation of peptidic sequences so as to confer upon them an antibacterial activity.